

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058484 A1

(51) International Patent Classification⁷: **B01J 21/16,**
23/10

(74) Agent: **SCHALKWIJK, Pieter, Cornelis;** Akzo Nobel
N.V., Intellectual Property Dept. (Dept. AIP), P.O. Box
9300, NL-6800 SB Arnhem (NL).

(21) International Application Number:
PCT/EP2004/013914

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 6 December 2004 (06.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/527,758 9 December 2003 (09.12.2003) US
04075064.8 9 January 2004 (09.01.2004) EP

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **AKZO
NOBEL N.V.** [NL/NL]; Verperweg 76, NL-6824 BM Arn-
hem (NL).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **JONES, William**
[GB/GB]; 56, Lantree Crescent, Cambridge, CB2 2NJ
(GB). **STAMIREs, Dennis** [US/US]; 3401 Colony Plaza,
Newport Beach, CA 92660 (US). **O'CONNOR, Paul**
[NL/NL]; Hogebrinkerweg 9, NL-3871 KM Hoevelaken
(NL). **BRADY, Michael** [US/US]; 4248 Rhodes Avenue,
Studio City, CA 91604 (US).

Published:

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: CATALYST COMPOSITION COMPRISING ANIONIC CLAY AND RARE EARTH METALS, ITS PREPARATION
AND USE IN FCC

(57) Abstract: The invention relates to a catalyst composition comprising anionic clay, lanthanum (hydr)oxide carbonate, and cerium oxide. This composition can suitably be used in FCC for the reduction of NO_x and/or SO_x emissions, the reduction of the S and/or N-content in fuels, and as a metal trap. The composition can be prepared by forming a precipitate from a solution comprising a divalent metal salt, a trivalent metal salt, a lanthanum salt, and a cerium salt, calcining the precipitate at 200-800°C, and rehydrating the calcined precipitate in the presence of a carbonate source to form a composition comprising anionic clay, lanthanum (hydr)oxide carbonate, and cerium oxide.



WO 2005/058484 A1